

## ABSTRACT OF THE DISCLOSURE

A large mode field diameter optical fiber is disclosed. It is a single mode optical fiber which has a core and a cladding. The core of this fiber has two regions, an inner core region and an outer core region which has a refractive index lower than that of the inner core region. The inner core region is doped with a rare-earth element, such as  $\text{Er}_2\text{O}_3$ , and a co-dopant, such as  $\text{Al}_2\text{O}_3$ , and the outer core region is doped with a dopant such as  $\text{GeO}_2$ . The types and amounts of the dopants and co-dopants are adjusted to obtain a fiber with a mode field diameter greater than  $5.5\text{ }\mu\text{m}$  at a wavelength of  $1550\text{nm}$ .